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April 12, 2002

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

VIA HAND DELIVERY

William F. Caton  
Acting Secretary  
Office of the Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

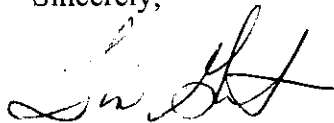
Re: TTY Forum's Aggregate Report of Carriers  
for 1<sup>st</sup> Quarter 2002, CC Docket No. 94-102

Dear Mr. Caton:

Enclosed are an original and four copies of the TTY Forum 21 Meeting Summary. Appendix L contains an aggregate report of wireless service providers, handset and infrastructure manufacturers for 1<sup>st</sup> Quarter 2002 filed on behalf of ATIS' sponsored TTY Forum and in response to the Commission's Fourth Report and Order in the above-captioned case. Please date-stamp and return the enclosed extra copy of this filing to our messenger.

Please contact me at 202/434-8830 if you have any questions or comments.

Sincerely,



Toni E. Gilbert  
Staff Attorney

No. of Copies rec'd 074  
List ABCDE

Enclosures

cc: Kris Monteith, Chief, Policy Division, WTB  
Pamela Gregory, Director, Disabilities Rights Office, CGB  
Mindy Littell, Attorney Advisor, Policy Division, WTB

Standards Committee T1

Carrier Liaison Committee

Telecommunications  
Industry Forum

Ordering and Billing  
Forum

Network Interconnection  
Interoperability Forum

Industry Numbering  
Committee

Protection Engineers  
Group

Standards Committee O5

Network Reliability  
Steering Committee

Internetwork  
Interoperability Test  
Coordination Committee

Telecommunications  
Fraud Prevention  
Committee

Generic Requirements  
Users Group

International Forum on  
ANSI-41 Standards  
Technology

Interactive Voice  
Response Forum

TTY Forum

Administrative Council for  
Terminal Attachments

IMSI Oversight Council



# **TTY Forum – 21**

## **Meeting Summary Report**

**March 5, 2002**  
**ATIS Conference Center**  
**Washington, DC**



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## TTY/TDD Forum – 21

March 5, 2002

ATIS Conference Center

1200 G Street, NW, Suite 500

Washington, DC

### Agenda

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**Chaired by Ed Hall, ATIS**

1. Call to Order, Introductions and Attendance Roster
2. Call for and Number of Contributions  
(All Contributions will be numbered as follows: TTY21/02.03.05.XX)
3. Review & Approve Agenda
4. TTY Forum #20 Summary
5. TTY Correspondence and Liaison Reports: *FCC; CTIA; NAD; TDI; NENA; ATIS*
6. Review TTY Forum #20 Agreements and Action Items
7. Industry Implementation Status Reports
8. Technical Activities
  - a. TTSI Report
  - b. Review and Update Appendix J-Technical Standards Reference
  - c. Other – FCC Ex Parte Meeting
10. Terminal Product Identification Committee Report
  - a. Labeling
  - b. Roll-Out
10. Next Meeting
  - Tuesday, June 4, 2002
11. New Business
12. Adjournment



## TTY/TDD Forum – 20

December 11, 2001

ATIS Conference Center

1200 G Street, NW, Suite 500

Washington, DC

### Meeting Summary

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#### 1. Call to Order, Introductions and Attendance Roster

Ed Hall, TTY Forum Chair, welcomed all participants and called the meeting to order. He noted that the Forum's agenda is very aggressive and that there is a lot to be done during today's meeting. He noted that microphones were necessary for all participants and asked that they introduce themselves. All participants took the opportunity to introduce themselves.

#### 2. Call for and Number of Contributions

(All Contributions will be numbered as follows: TTY21/02.03.05.XX)

Ed Hall introduced all contributions and asked for any additional contributions. All contributions provided to the Secretariat electronically are available for download on the TTY Forum web site at <http://www.atis.org/atis/tty/ttydocs.htm>, or by sending a request to Megan Hayes ([mhayes@atis.org](mailto:mhayes@atis.org)). Contributions were submitted and numbered as follows:

Number	Title
TTY21/02.03.05.01	Agenda
TTY21/02.03.05.02	Roster
TTY21/02.03.05.03	TTY 20 Meeting Summary
TTY21/02.03.05.04	TTY20 Agreements and Action Items
TTY21/02.03.05.05	TTSI Report to TTY Forum #21
TTY21/02.03.05.06	Appendix J
TTY21/02.03.05.07	Letter to FCC from TTSI re: PSAPs
TTY21/02.03.05.08	Testing Status Report and Roll-Out Plans from Ericsson
TTY21/02.03.05.09	Sony Ericsson Verbal Presentation
TTY21/02.03.05.10	TPIC Recommendations
TTY21/02.03.05.11	TTY21 Agreements and Action Items
TTY21/02.03.05.12	TTY21 Meeting Summary

#### 3. Review & Approve Agenda

The agenda (TTY21-02-03-05-01) was distributed and Mr. Hall asked if there were any proposed modifications. Mr. Hall added "FCC Ex Parte Meeting" to agenda topic 8c.

#### 4. TTY Forum #20 Summary

Mr. Hall introduced Contribution TTY21-02-03-05-03, the Meeting Summary from the TTY Forum #20 and asked if there were any suggested modifications to it. There were none and the document was accepted as final.

## **5. TTY Correspondence and Liaison Reports: FCC; CTIA; NAD; TDI; NENA; ATIS**

- a. **FCC** – Mindy Littel, FCC, introduced all FCC representatives to the Forum. She noted that the Commission is interested in hearing of the progress that has been made since the last Forum meeting. She also noted that the FCC is hopeful that the June 30, 2002 deadline is still feasible despite the problems found during testing and reported to the FCC by the TTY Technical Standards Implementation (TTSI) Incubator. She explained that the Wireless Policy Bureau and the Disability Rights Office would be meeting with ATIS and TTSI next week to discuss Contribution TTY21-02-03-05-07, the letter from TTSI to the FCC regarding the PSAP problem. Mr. Hall asked that all questions regarding this letter be held until Agenda Item 8c.
- b. **CTIA** – No Comments.
- c. **NAD** – No Comments
- d. **TDI** – Jim House noted that TDI has published their 2002 Blue Book and noted that if anyone was interested in obtaining a copy, they should contact him ([jimhouse@tdi-online.org](mailto:jimhouse@tdi-online.org)).
- e. **NENA** – Toni Dunne, NENA, noted that she has been updating NENA on the progress of TTY testing and that NENA is aware of the problem that was uncovered during testing. She noted that the Public Service Answering Points (PSAPs) have been removed from the loop until TTSI could test with the PSAP manufacturers, but that not all PSAP manufacturers have been participating in TTSI testing. She explained that NENA has been working to notify all manufacturers of the problem and to ask them to work with ATIS to ensure that all manufacturers' equipment is being tested.
- f. **ATIS** – Ed Hall introduced Contribution TTY21-02-03-05-07, a letter from ATIS (on behalf of the TTSI Incubator) to the FCC. The letter was written to notify the FCC of problems discovered while testing with PSAPs. He noted that ATIS would not be contacting the National Association of Regulatory Utility Commissioners (NARUC) as stated in the letter because of advice from NENA. Mr. Hall explained that ATIS and the TTSI would be meeting with the FCC to further discuss this letter on March 12, 2002, and that the Forum would be discussing it during Agenda Topic 8c.

## **6. Review TTY Forum #20 Agreements and Action Items**

Ed Hall reviewed Contribution TTY21-02-03-05-04, the Agreements and Action Items from TTY20. He detailed where these items would be reviewed in the agenda. There were no further comments submitted on these items at this point.

## **7. Industry Implementation Status Reports**

This agenda item was moved to follow the TTSI Technical Report.

**Ericsson**

Amy Johnson, Ericsson, presented Contribution TTY21-02-03-05-08, Ericsson's network infrastructure status report. She noted that the software for TDMA was initially released on December 5, 2001 and has had several new releases since that time. For GSM, the TTY solution had its FOA in December 2001 and January 2002. Rollouts will begin in March 2002. The CDMA software code development is complete as well as lab and integration testing. The software was available for carrier testing on February 8, 2002.

**Sony Ericsson**

Matt Kaltenbach presented Contribution TTY21-02-03-05-XX, Sony Ericsson's status report. He noted that development was complete for TDMA. Regression testing of HCO/VCO is scheduled for TTSI test event #4. Final handset user interface testing is also underway.

GSM handsets are in the final stages of development and testing. Carrier test units are available at the Special Needs Center. HCO/VCO regression testing is scheduled for March 2002. Product availability is expected by April 2002.

CDMA handsets have encountered performance issues during testing. Network testing revealed that the TTY standard is susceptible to echo. The phone is expected to be available by April 2002.

Sony Ericsson is undergoing drive testing with good results and they are in the final phases of product release. Mr. Kaltenbach noted that all products are scheduled to be available to customers prior to June 30, 2002.

**Cingular**

Ken Evans, Cingular, noted that the TTSI work has made implementation into the network much easier. He reported that on TDMA, Ericsson software was generally available on December 1, 2001 and that they are installing patches that they are hopeful will aid in the PSAP issue. He noted that they will probably turn on Ericsson TDMA switches in April.

Mr. Evans reported that GSM interoperability testing in Pleasanton, CA resulted in positive results. He explained that the Nortel switches will not be able to be turned on until May 7, 2002. He is concerned that the lateness of software availability may jeopardize the deadline.

Mr. Evans reported that 60% of the Cingular network is currently operational and that by the end of April, the percentage is expected to be closer to 95%. They are hopeful that with the addition of Nortel switches in May, they will be 100% operational by the end of May.

Cingular has participated in interoperability testing with TTSI for all three of their air interfaces. Mr. Evans reported that mobile-to-mobile and mobile-to-landline testing has shown that they have a viable TTY solution. Once the PSAP issue has been resolved, they expect to be in full compliance. Cingular hopes that if the PSAP issue has not been resolved by the deadline, they will be able to deploy digital technologies to deaf users by the deadline.



Susan Palmer, Cingular, noted that they are working with Gallaudet University for user testing. They want to know what gaps exist in providing customer support and what issues people will run into when the product rolls out. She thanked Gallaudet University for their assistance and thanked their vendors for providing Cingular with products in a timely fashion.

#### **AT&T Wireless (AWS)**

Lori Buerger, AWS, introduced Lance Leamer and noted that he was taking the place of Scott Prather for this meeting. She reported that AWS was in a similar situation as Cingular Wireless. AWS has made progress in their CDMA network.

Lance Leamer noted that TTY is enabled in all TDMA markets with Lucent switches. He reported that Nortel deployment should begin shortly. Mr. Leamer explained that Ericsson equipment and software are currently being tested and will start deploying when available. Finally, he noted that the Ericsson GSM First Office Application (FOA) is scheduled for later this month and they expect handsets to be available in June.

#### **Nextel**

Bob Montgomery, Nextel, reported that Nextel is currently in deployment stage. He reported that Nextel expects to be ready for full deployment by the June 30<sup>th</sup> deadline.

#### **Nortel**

Charles Spann noted that customers are testing with TDMA and CDMA solutions. He reported that they expect to meet the deadline, depending on the resolution of the PSAP issue.

#### **Sprint PCS**

Scott Freiermuth reported that Sprint has 4 network vendors. Sprint has begun testing and is near completion. Mr. Freiermuth explained that the TTY feature is active in several Sprint markets with Lucent equipment and software. He noted that Nortel is active in one market, and Sprint is currently testing their Samsung markets. Finally, he reported that the Motorola FOA is scheduled for mid-March, and there will be a user trial in early April.

Handsets have been tested for 5 vendors, and interoperability testing for infrastructure vendors has been completed in the lab. Mr. Freiermuth explained that problems have been isolated to specific vendors. Sprint has yielded low error rates during all testing, and they also expect to meet the deadline depending upon the resolution of the PSAP issue.

### **8. Technical Activities**

#### **a. TTSI Report**

Jim Turner presented Contribution TTY21-02-03-05-05, the TTSI Report to TTY Forum #21. Cary Barbin asked whether a 911 call will go through without a SIM card. A participant noted that without a SIM call you can still call 911, but without a SIM card you can not put the phone in TTY mode. Mr. Hall noted that CDMA and TDMA phones allow for 911 calls without activation.

Ed Hall noted that TTSI has discovered some issues with TIA/EIA-TSB-121, but that the authoring Standards Development Organization (SDO) is aware of these problems and is working to fix them. The issues revolve around the 2.5 mm jack and how it fits into the phone. Mr. Hall emphasized that as issues are being discovered, TTSI is working with the appropriate parties to resolve them.

Judy Harkins, Gallaudet University, asked for an update on the DTMF issue raised at the IVR Forum #3 meeting. Matt Kaltenbach, Ericsson, explained that they did not have an issue in their product with generating DTMF, but that DTMF was interfering with the baudot tones. Mr. Kaltenbach noted, however, that he was unsure whether other manufacturers' equipment would work in the same manner.

**b. Review and Update Appendix J-Technical Standards Reference**

Megan Hayes introduced Contribution TTY20/01-12-11-05, Appendix J to the TTY Forum Meeting Summary (Technical Standards Reference). She explained that Mr. Hall wanted to be sure that the appendix contained the correct information. The Forum studied the document and suggested updates to it as appropriate. The revised document is numbered TTY21/02-03-05-06.

***ACTION ITEM: Megan Hayes will compare the contribution from Gunnar Hellstrom regarding 3GPP standards and compare it to Appendix J. She will also compare the list from Dick Brandt, Gallaudet University. The complete list will be included with the Meeting Summary for TTY Forum #21.***

**c. Other**

Toni Dunne explained that she has been working closely with the TTSI Incubator Group to ensure contacts for and communications with various PSAPs are established to help resolve the TTY/PSAP incompatibility issue. She also mentioned that NENA will join the telecommunications industry for the ex parte scheduled for March 12, 2002.

Jim Turner explained that the TTSI investigated which standards PSAP manufacturers were building to and found PN1663, a NENA project number. He noted that TTSI looked to see if the PSAPs were actually building to this standard and found that they were building to the TIA/EIA 825 and 840 standard for modems. He explained that the PSAP problem is complicated by the sheer number of PSAPs in the country, which use different methods for TTY detection. Mr. Turner explained that this is a very complex problem that includes liability issues for the PSAPs, PSAP manufacturers that are no longer in existence, and problems with the standards. He explained, however, that TTSI has been working with PSAP manufacturers to determine the best resolution for the problems before the June 30, 2002 deadline. He noted that they have been testing with 30 out of the 33 PSAP types identified by TTSI.

A participant asked how the industry is determining what kind of PSAPs exists and where they are installed. Toni Dunne answered that NENA is working to obtain that information and has been successful in providing the information they have accumulated to TTSI.

Ed Hall noted that the TTY Forum has always worked with the three largest consumer-oriented TTY Manufacturers: Krown, Ultratec and Ameriphone, but that TTSI has identified numerous other TTY Manufacturers and is now trying to work with those manufacturers. In addition, TTSI is attempting to determine whether or not the TTYs are compatible with the relevant standards. Mr. Hall explained that the telecommunications industry is facing an embedded base of TTYs, some of which were manufactured by companies that no longer exist. In addition, Mr. Turner noted that when he contacts PSAPs, they often are unsure of what kind of equipment they are using.

A participant asked whether upgrades to the PSAP equipment planned for Phase I and Phase II E-911 could include consideration of TTY equipment. Ms. Dunne noted that the upgrade of the equipment is a process that is different for each PSAP. Mr. Turner noted that the upgrades would not necessarily include new equipment, but might just be accessories to existing equipment.

V.18, many PSAPs are implementing V.18, which is a great way for the deaf community to veer from baudot, but it is creating problems for testing with TTYs. Mr. Turner noted that there are two PSAP vendors that TTSI is aware of that have V.18 implemented in their systems today.

Mr. Hall explained that the message that would be taken to the FCC during the meeting next week would be that the telecommunications industry is ready to launch service to TTY users by the deadline of June 30, 2002, but that some problems occurred when testing with PSAPs. He noted that participants at the meeting would include Ken Evans, Cingular, Al Lucas, Motorola, Scott Freiermuth, Sprint, Andrea Williams, CTIA, John Melcher and Richard Taylor, NENA, Karen Gutlick, AWS, Steve Coston, Ericsson, Judy Harkins, Gallaudet University, as well as Ed Hall and Megan Campbell, ATIS.

Mr. Hall noted that the group would be suggesting that the launch by the June 30, 2002 deadline would allow for conversations with friends and families, but that there be a phase-in of 911 capabilities for TTY compatibility because of the problems with PSAPs. In addition, the TTSI would be asking the FCC who is responsible for the problems with the PSAPs. The telecommunications industry has shown due diligence regarding this issue, and the PSAPs need to come forward and meet the telecommunications industry half way. Furthermore, the group would be explaining that there needs to be some standardization process for testing with TTYs. If there is no way to determine whether TTYs are standards compliant, the wireless industry will continue to encounter testing problems.

Scott Freirmuth asked whether the phase-in method would be practical considering that wireless networks are not-designed upon geo-political boundaries. Lori Buerger noted that she had concerns with the phased-in roll out. PSAP by PSAP model has not been a speedy one and it concerns her that the roll out for TTY has been delayed too long.

Cary Barbin asked whether a dual phone which went to an analog system would work with a TTY. Ed Hall noted that TTSI would be testing this.

***ACTION ITEM: Ed Hall, ATIS, will inform the TTY Forum of the outcome of the meeting with the FCC and will distribute the power point presentation made at the FCC.***

#### **9. Terminal Product Identification Committee (TPIC) Report**

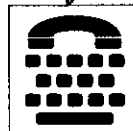
Jim House, Chair of the TPIC, explained that the group recommends that the industry use a consistent symbol to indicate that a handset will work with a TTY. Specifically, they recommend the internationally recognized TTY symbol or some modification of it be used. He explained that there was some concern that there would be confusion if just the symbol was used and that several members of the committee suggested using the symbol with some indication that the TTY machine would need to be connected to the handset.

In addition, the group recommends that the symbol be supported by additional documentation on the web site, in the users manual, in a technical manual and/or in promotional materials. Staff should be sufficiently trained to identify phones that will work with TTYs and to counsel consumers. Mr. House explained that the TPIC decided to suggest that carriers and manufacturers use their discretion in deciding where to place the symbol, but that the consumer made several suggestions for placement. Those suggestions are on the handset, on the screen, on the box, in the user manual, etc.

Finally, the TPIC decided to remain open to continue their work. They decided that it would be a good idea to prepare a resource guide for inclusion in the TTY Forum Meeting Summary as an Appendix. The resource guide will include information such as contact information for consumer groups, information on where to find the TTY symbol, and the recommendations of the group.

There was a discussion of the placement of the TTY symbol. Several manufacturers and carriers felt that the TPIC was recommending a specific placement. Megan Hayes, TTY Forum Secretariat, explained that was not the case. She noted during the TPIC meeting, the consumers strongly suggested several locations, but that the entire group could not come up with an agreement on exactly the best placement for the symbol. Therefore, the group decided to suggest that the placement of the symbol be left up to the discretion of the carriers and manufacturers. A participant expressed her concern that too much emphasis was being put on the location of the symbol, rather than training people to understand what this symbol means. A consumer noted that their primary choice for placement of the symbol is on the handset.

***AGREEMENT REACHED: The telecommunications industry should use a consistent symbol to indicate that a handset will work with a TTY. Specifically, the internationally recognized TTY symbol or some modification of it should be used.***



**10. Next Meeting**

- Tuesday, June 4, 2002
- September 17, 2002

**11. New Business**

**12. Adjournment**

Megan Hayes adjourned the meeting at 3:45pm.

**TTY – 21**  
**Meeting Roster**  
**March 5, 2002**  
**Washington, DC**

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Beth Wilson	SHHH			
Watson Zan	Rogers Wireless	416-935-6031	416-935-7502	wzan@rci.rogers.com

The following companies submitted their TTY Implementation Status Reports for the second quarter of 2001 through the TTY Forum, but did not attend TTY Forum #18.

Alaska Communications Systems Wireless  
Caprock Cellular Limited Partnership  
Carolina West Wireless  
Cellular XL Associates  
Corr Wireless Communications LLC  
Farmers Cellular Telephone Inc.  
Midwest Wireless Holdings  
Leap Wireless  
Nokia  
Pine Belt Cellular  
Rural Cellular Corporation  
Southern LINC  
Telecorp PCS